

## SHIRLEY

As Polly transformed to an extratropical cyclone in the Sea of Japan, the monsoon trough reformed across the Philippine Sea from Taiwan to the Volcano Islands. On 3 September, a tropical cyclone was evident in synoptic and satellite data about 150 nm south of Okinawa. Drifting east and northeastward, Shirley was located about 60 nm south of Minami Daito Jima on the 4th when aircraft reconnaissance reports observed winds reaching storm force in the circulation's northern semicircle (Figure 4-14).

Located at the base of an upper level trough east of Korea, Shirley drifted slowly northward passing abeam of Minami Daito Jima early on the 5th. A minimum barometric reading of 986.0 mb was recorded at the island's weather station (05/0300Z). Peak gusts out of the south measured 54 knots (05/1300Z).

As the 500-mb trough over the Sea of Japan moved eastward on the 5th, rising heights north of Shirley caused the storm to turn westward. By the 6th, aircraft reconnaissance of Shirley indicated winds had reached typhoon force shortly before the storm's center passed over the island of Okinoerabu-Shima in the Ryukyu chain. (Figure 4-15) The barometer dipped to 977.4 mb on the island during center passage (06/1130Z), and, as winds shifted to the south-southeast, a peak gust of 82 knots was recorded (06/1310Z).

Shirley's circulation was rather small as gale force winds were limited to a radius of 75 nm of the center. To the north, Naze on Amami-O-Shima reported peak gusts to 43 knots (07/0150Z), while to the south the gust recorder at the Naha Observatory measured 44 knots (06/1530Z).

An approaching short wave over the

Yellow Sea began to draw Shirley on a slow poleward drift on the 7th. As the base of this trough by-passed the typhoon to the north, Shirley accelerated in a northeasterly direction on the 8th, landing 12 hours later slightly below typhoon force on the coastline of Kyushu. Prior to landfall, the center passed directly over Kusagakishima (elevation 454 feet) which experienced a barometric reading of 982.4 mb (08/0800Z) and sustained 10-minute winds of 70 knots.

The coastal city of Makurazuki, 10 nm south of center crossing, received wind gusts to 90 knots (08/1050Z) from the south-southeast followed by a minimum pressure reading of 985.9 mb (08/1120Z).

Accelerating to forward speeds of 24 kts, Shirley quickly passed Kyushu and Shikoku and transformed into a weak extratropical low over the Kii peninsula on the 9th. Strong gusty winds occurred along the southern coast of Shikoku as Shirley's center passed by late on the 8th. South-southeasterly winds peaking near 42 knots and 70 knots were recorded at Ashizuri and Murotomisaki (station elevation 745 feet) respectively.

Torrential rains brought by Shirley totaled 6.2 inches in 24 hours at Nobeoka on the eastern coast of Kyushu, while Tokushima on the eastern coast of Shikoku reported 7.5 inches (24 hours) during passage. The heavy rains halted the Japanese National Railway services in parts of Kyushu and completely in Shikoku. Power blackouts were also wide spread in Kyushu due to gusty winds downing power lines.

Landslides and flash flooding as a result of the rains were responsible for the flooding of over 30,000 homes, and a casualty toll of 13 dead or missing.

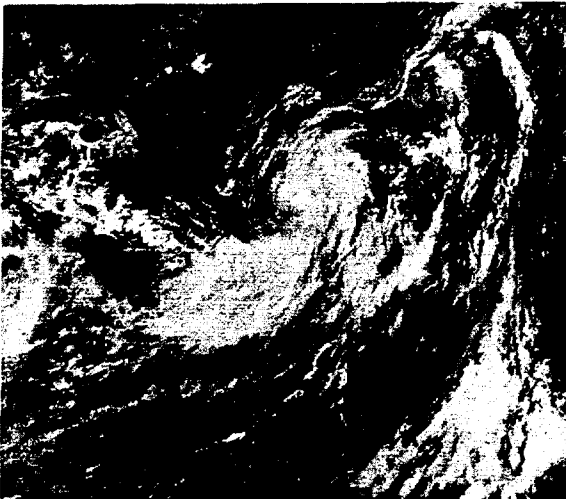


FIGURE 4-14. Formative stages of Shirley centered 180 nm southeast of Naha, Okinawa, 3 September 1974, 2329. [DMSP imagery]

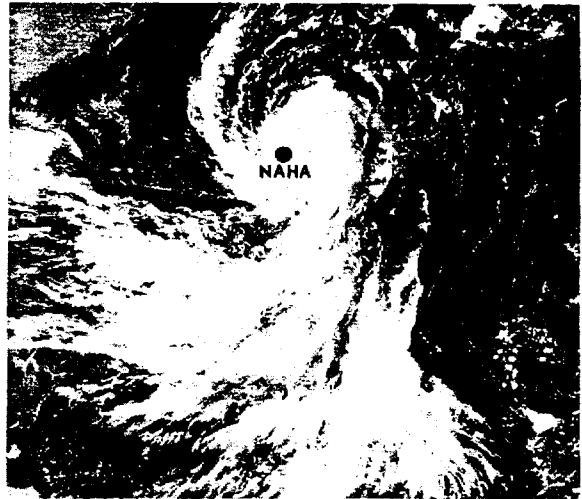


FIGURE 4-15. Shirley reaching typhoon strength 110 nm northeast of Naha, Okinawa, 6 September 1974, 0239Z. [DMSP imagery]